
Operation

On-net dialing

This section deals with the dialing required to reach a station which is located in the same network. Any station in the network is represented by a flexible number of digits. This includes the use of Uniform Dialing Plan such as LOC + DN, or Universal Numbering Plans; for example, CDP.

Location code

Flexible length Location Codes (LOC) have been available since Release 8. This allows three to seven digit LOCs. Currently, the flexible length LOC code does not change the length of the number which a user is allowed to dial, but only changes which portions of the number are recognized as different components. Therefore, if a LOC is dialed, seven digits are expected before any attempt is made to terminate the call.

The FNP feature allows the specification of the total number of digits, up to ten, which are required to terminate on a station at a particular node. As well, one to seven digit LOCs are allowed.

When a LOC is dialed, a Route List Block (RLB) is used to make routing decisions. The number of digits expected is defined by the response to the Flexible Length (FLEN) prompt, prompted when the LOC is defined. FLEN allows the length of the number dialed to be up to 10 digits. If the user dials a DN shorter than FLEN, termination is attempted when the octothorpe (#) is pressed or when the NARS interdigit timer times out. If the FNP package (160) is not equipped or the response to the FLEN prompt is zero (0), then digit analysis is performed as it was prior to the introduction of FNP.

End-of-dial timing

All NARS end-of-dial timing procedures apply to FNP along with the FNP unique Flexible Length (FLEN) processing. If the user dials the number of digits as defined by the response to the FLEN prompt, then the software considers dialing as being complete and analyzes the digits for call processing purposes.

The following illustrates when termination will be attempted by FNP for various FLEN settings, LOC code lengths, and digits dialed.

number of digits	LOC m=1-7	+	DN FLEN-m
Digits Expected (FLEN)	Length of LOC	Digits Dialed	Termination
7	3	7	right away.
7	3	6	following # or time out.
7	2	7	right away.
7	2	6	following # or time out.
10	7	10	right away.
10	5	9	following # or time out.
10	5	4	not possible.
10	7	18	when 10 digits are dialed
0			according to CDP, BARS, or NARS operation.

Coordinated Dialing Plan

When Coordinated Dialing Plan (CDP) is used, stations are represented by unique three to ten digit numbers (since Release 13). CDP uses Local Steering Codes (LSC), Distant Steering Codes (DSC), or Trunk Steering Codes (TSC) that are one digit to seven digits long to determine how dialed numbers are reached. A station at one location can call a station at another location within the CDP group by dialing the unique three to ten digit number without access codes and associated optional pauses for dial tone.

Without FNP, the number of CDP (NCDP) digits dialed to reach a particular location must be the same for all stations at that location. If fewer digits than NCDP are dialed, the system times out and gives overflow tone.

With FNP, any station at any location is represented by a unique one to ten digit Directory Number (DN). DNs of different length can coexist at the same location. Termination is attempted when the system times out or when the octothorpe (#) is pressed, even if the expected number of digits (FLEN) are not dialed.

The following illustrates when termination will be attempted by FNP for various FLEN settings, DSC or LSC or TSC lengths, and digits dialed.

DSC or LSC or TSC		+	DN
number of digits	m=1-7		FLEN-m
up to maximum of: 10 digits for DSC			
16 digits for TSC			
no limit for TSC if FLEN=0			
Digits Expected (FLEN)	Length of DSC or LSC or TSC	Digits Dialed	Termination
7	3	7	right away.
7	3	6	# or time out.
7	2	7	right away.
7	2	6	# or time out.
10	7	10	right away.
10	5	9	# or time out.
10	5	4	not possible.
10	7	11	when 10 digits are dialed
0			according to CDP, BARS, or NARS operation.

End-of-dial timing

All NARS end-of-dial timing procedures apply to FNP along with the FNP unique Flexible Length (FLEN) processing. If the user dials the number of digits as defined by the response to the FLEN prompt, then the software considers dialing as being complete and analyzes the digits for call processing purposes.

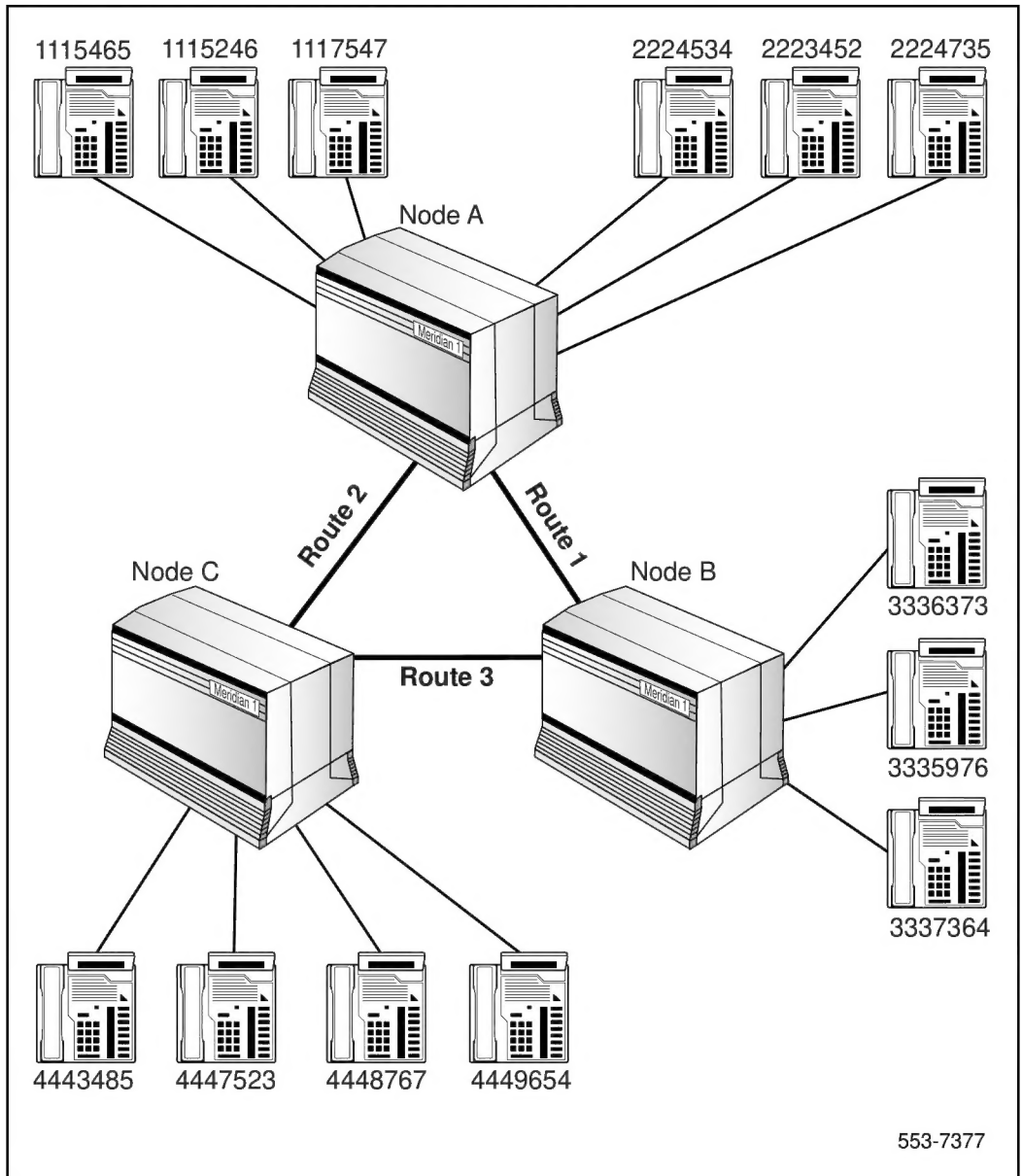
For Trunk Steering Codes (TSC) the default value for ITOH (Inhibit Time Out Handler) is “NO” allowing termination of the call to be attempted. If ITOH is set to “YES” then the call will not terminate if the NIT timer expires before the number of digits dialed reaches the value entered for FLEN.

Universal Numbering Plan

Currently, Coordinated Dialing Plan (CDP) is capable of using Local Steering Codes (LSC), Distant Steering Codes (DSC), or Trunk Steering Codes (TSC) that are one digit to seven digits long. The Global Networking Requirement calls for three to seven digit Transferable DNs (TNDNs) across the network. Furthermore, the TNDNs must be able to have variable lengths, even on the same node. In order to fulfill this requirement, one to seven digit steering codes are used. Since X11 Release 13, the maximum number of digits allowed was expanded from four to seven digits, and the maximum number of steering codes allowed was expanded from 5000 to 10000. With the introduction of FNP the maximum number of steering codes has again been increased to 32000.

Figure 1 shows an example of the Universal Numbering Plan (UNP) network with TNDNs. This network uses three digit Distant and Local Steering Codes.

Figure 1
Universal Numbering Plan with transferable DNs

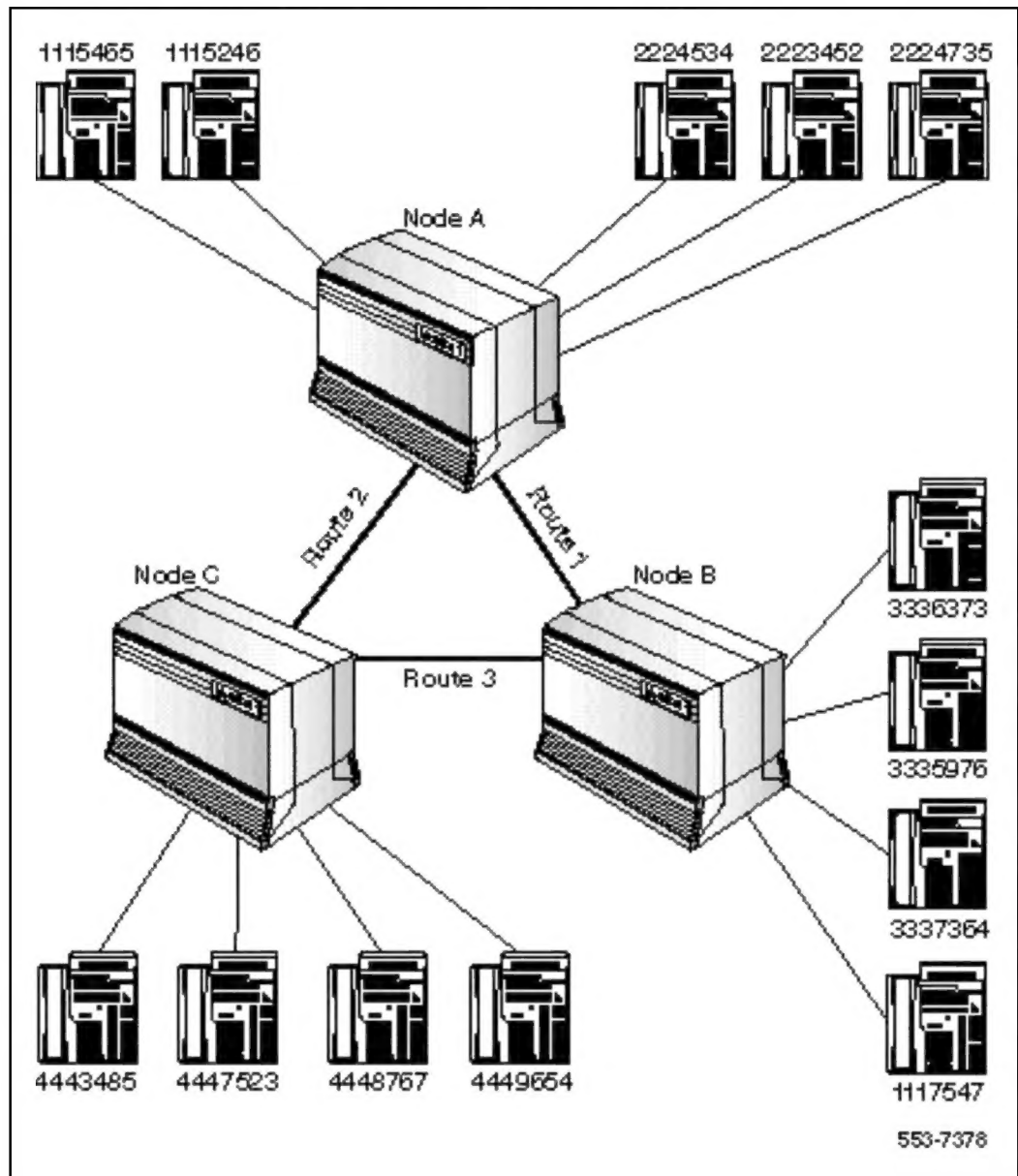


Following is an overview of the software configuration required to route calls between nodes:

	Distant Steering Code	Route Block List	Entry	Route Number	Digit Manipulation Index	Digits to Delete
A to B:	333	1	1	1	1	3
		1	2	2	2	0
A to C:	444	2	1	2	1	3
		2	2	1	2	0
B to A:	111	1	1	1	1	3
		1	2	3	2	0
	222	1	1	1	1	3
		1	2	3	2	0
B to C:	444	2	1	3	1	3
		2	2	1	2	0
C to A:	111	1	1	2	1	3
		1	2	3	2	0
	222	1	1	2	1	3
		1	2	3	2	0
C to B:	333	2	1	3	1	3
		2	2	2	2	0
	Local Steering Code	Digit Manipulation Index		Digits to Delete	Directory Numbers	
A to A:	111	1		3	2565, 5246, 7547	
	222	1		3	4534, 3452, 4735	
B to B:	333	1		3	6373, 5976, 7364	
C to C:	444	1		3	3485, 7523, 8767, 9654	

[Figure 2](#) shows the network following the move of TNDN 1117547 from node A to node B.

Figure 2
Universal Numbering Plan network following transferable DN move



Following is an overview of the software configuration following the move of TNDN 1117547:

	Distant Steering Code	Route Block List	Entry	Route Number	Digit Manipulation Index	Digits to Delete
A to B:	333	1	1	1	1	3
		1	2	2	2	0
	1117547	2	1	1	2	0
		2	2	2	2	0
A to C:	444	2	1	2	1	3
		2	2	1	2	0
B to A:	1112	3	1	1	2	0
		3	2	3	2	0
	1115	3	1	1	2	0
		3	2	3	2	0
	222	1	1	1	1	3
		1	2	3	2	0
B to C:	444	2	1	3	1	3
		2	2	1	2	0
C to A:	1112	3	1	2	2	0
		3	2	3	2	0
	1115	3	1	2	2	0
		3	2	3	2	0
	222	1	1	2	1	3
		1	2	3	2	0
C to B:	1117547	2	1	3	2	0
		3	2	2	2	0
	333	2	1	3	1	3
		2	2	2	2	0

	Local Steering Code	Digit Manipulation Index	Digits to Delete	Directory Numbers
A to A:	222	1	3	4534, 3452, 4735 1112565, 1115246
B to B:	333	1	3	6373, 5976, 7364 1117547
C to C:	444	1	3	3485, 7523, 8767, 9654

Group Dialing Plan

Group Dialing Plan (GDP) allows coordinated dialing within a larger network which uses Location codes to be set up.

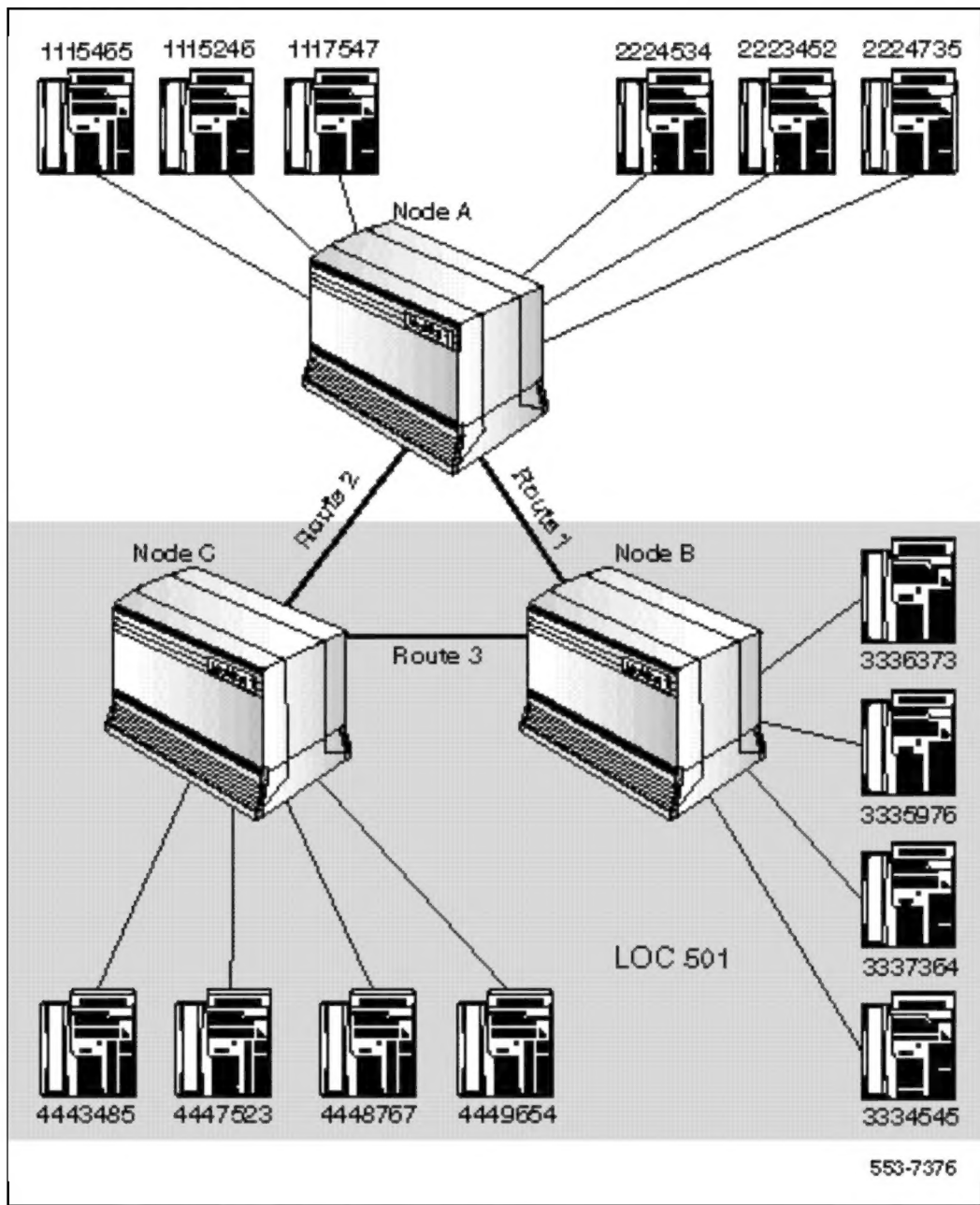
Each group has an LOC that has to be dialed from outside the group as a prefix to the group Coordinated Dialing Plan: that is have LOC and CDP working together. In this case, the number dialed to a station can be different when dialed from different locations.

When Group Dialing Plan (GDP) is used, the maximum number of digits allowed for either LOC+DN, LSC+DN, or DSC+DN cannot exceed 10 digits if the dialing plan is to perform properly. [Figure 3](#) illustrates a Group Dialing Plan network.

In order to get to station 6373 on node B:

- User 2565 on node A dials 501-3336373.
- User 3485 on node C dials 3336373.
- User 5976 on node B dials 6373.

Figure 3
Group Dialing Plan



Digit Display with Integrated Services Digital Network

Within an Integrated Services Digital Network (ISDN), the digit display sent or received varies depending on the digits dialed to activate the routing. This depends on the method used to configure the digits dialed (i.e. LOC, DSC). Currently, if a LOC is dialed the HLOC is sent as a prefix to the DN.

Similarly, if a DSC is dialed, the LSC is prefixed before the DN. This method creates very inconsistent display formats in situations where Group Dialing Plans are used. To solve this problem, a new option is introduced to the DSC prompt sequence that allows a user to identify what prefixes the DN sent. The options are HLOC, LSC, or nothing.

LOC+DN dialing

Dialing Party sees: LOC+DN of answering party.

Called Party sees: LOC+DN of dialing party.

CDP dialing

Dialing Party sees: LSC+DN of answering party.

Called Party sees: LSC+DN of dialing party.

Group dialing

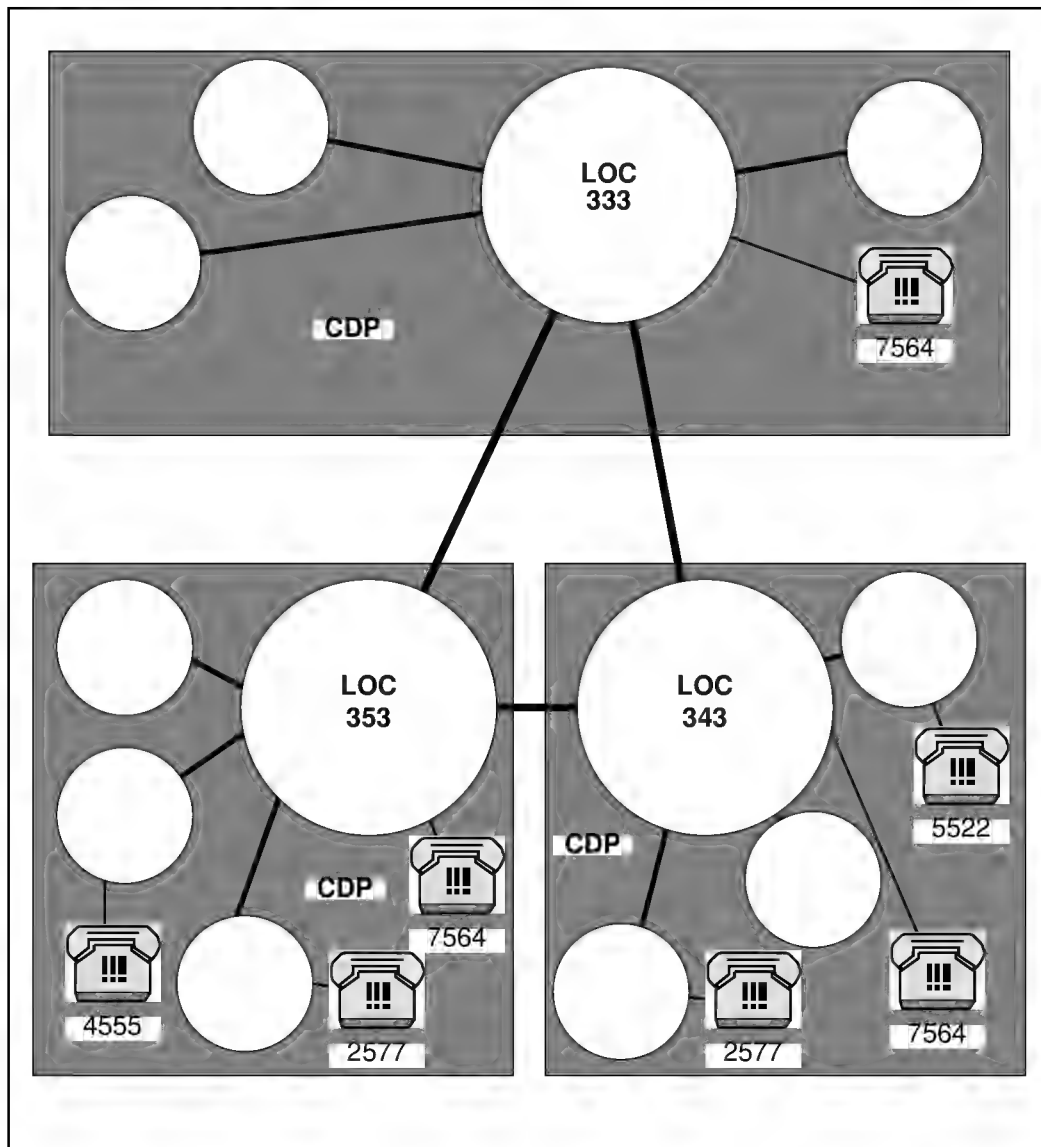
Depending on the option chosen on a per DSC basis, any of the following can be seen:

Dialing Party sees: LOC+DN or LSC+DN or DN of answering party.

Called Party sees: LOC+DN or LSC+DN or DN of dialing party.

[Figure 4](#) is an example of a network which uses the Group Dialing Plan. This sample network is used to show what will be displayed by various sets within the network.

Figure 4
Sample GDP network



The following are samples of the information that will be displayed by different sets in the network.

- 1** Station A (7564 at location 333) trying to reach station B (7564 at location 353).
Station dials: 63537564
Station A sees: 63537564
Station B sees: H3337564
Station B answers.
Station A sees: H3537564
Station B sees: H3337564
- 2** Station A (7564 at location 353 trying to reach station B (2577 at location 353).
Station A dials: 63532577
Station A sees: 63532577
Station B sees: H3337564
Station B answers.
Station A sees: H3532577
Station B sees: H3337564
- 3** Station A (7564 at location 333) trying to reach station B (2577 at location 353).
Station A dials: 2577
Station A sees: 2577
Station B sees: H7564 or H3337564 (depending on option in DSC)
Station B answers.
Station A sees: H2577 or H3532577 (depending on option in DSC)
Station B sees: H7564 or H3337564 (depending on option in DSC)
- 4** Station A 333-7564 trying to reach station B 353-4555.
Station A dials: 4555
Station A sees: 4555
Station B sees: H3337564 (LOC option chosen in DSC)
Station B answers.
Station A sees: H3534555 (LOC option chosen in DSC)
Station B sees: H3337564 (LOC option chosen in DSC)

Off-net dialing

This section deals with dialing required to reach a location which is not part of the Local Network. This is typically a public exchange station, but it also includes stations that are part of another private network.

FNPN introduces alternative routing for DID or DDD SPN numbers. The main purpose of alternative routing for DID or DDD SPN numbers is to define and enable alternate routing for calls recognized as remote DID or DDD SPN numbers within a private network. It will also allow for low cost routing of off-net numbers.

Alternative routing for DID or DDD SPN numbers introduces a new type of number in the SDRR block:

Alternate Routing Remote Number (ARRN).

Each ARRN has an Alternate Route List Index (ARLI) defined for it.

SDRR is applied after translating the Special Number at an intelligent NARS or BARS switch. If a match is found and specified as an ARRN number, Route Selection with the Alternate Route List Index defined for that number is performed.

Special Numbers

Currently, the length of a Special Number (SPN) can be 1 to 11 digits. When the SPN is dialed, the trunk is seized immediately. Any digits dialed afterwards are outpulsed. With the FNP feature, the system waits for FLEN of digits up to a maximum of 16 digits before attempting termination. If the user dials fewer than the FLEN of digits, termination is only attempted when the octothorpe # is pressed or when the NARS interdigit timer times out. If the FNP package is not equipped or if the value of FLEN is 0, then current operations are followed.

Note: If the SPN in question is 0, 00, 01, 011, 411, 611, 911, 800 or 1800 then the North American operation can be altered by setting the INPL prompt to YES. This will allow a flexible number of digits to be dialed and termination will be attempted only when the octothorpe # is pressed or when the NARS interdigit timer times out. For example, if SPN 00 is defined with FLEN = 0 and INPL = NO, termination can be attempted immediately after the SPN is entered and additional dialed digits will NOT be outpulsed.

The following illustrates when termination will be attempted by FNP for various FLEN settings, SPN lengths, and digits dialed.

number of digits	SPN m=1-11	+	DN FLEN-m
Digit Expected (FLEN)	Length of SPN	Digits Dialed	Termination
1	1	1	right way.
3	3	3	right away.
7	2	7	right away.
7	2	6	# or time out.
12	11	12	right away.
16	7	16	right away.
16	5	9	# or time out.
16	5	4	not possible.
0			according to CDP, BARS, or NARS operation.

An off-net number is recognized at a NARS or BARS intelligent switch.
Translation of the SPN number identifies the method of treatment for the call.

If the response to SDRR in overlay 90 is any response other than NONE, then SDRR is applied. Then one of the following occurs:

- If the number is “denied” (i.e., response to SDRR is DENY):
standard call blocking takes place.
- If the number is defined as terminating at the local switch (i.e., response to SDRR is LDID or LDDD):
the call is terminated at the station DN for DID and at the Attendant DN for DDD.
- If the number is defined as terminating at a remote Meridian 1 or Conventional Main switch (i.e., response to SDRR is DID or DDD):
Route Selection with the RLI defined for that SPN is performed. The call is then routed to the dialed station for DID numbers or to the attendant for DDD numbers.

If the trunk route used to route the call is a Tie trunk route, then a special digit manipulation is applied so that the proper numbers are outpulsed to terminate directly at the station or attendant of the Conventional Main switch.

If the trunk route used to route the call is any trunk route other than a Tie trunk route, then the call is processed by the current software with digit manipulation if necessary.

- If the number is defined as an Alternate Routing Remote Number (i.e., response to SDRR is ARRN):
Route Selection with the ARLI defined for that ARRN is performed.
Numbers declared as ARRN are leftwise unique.

Alternate Routing Remote Number (ARRN)

FLEN set to 0

When the response to the FLEN prompt in overlay 90 is “0” then:

- SPN can be between 3 and 11 digits in length.
- SDRR table entry length is limited:
 - To an absolute maximum of seven digits.
 - For any given SPN, to 11-X, where X is the digit length of the SPN.

FLEN is nonzero

When a response other than “0” is entered in response to the FLEN prompt, then:

- The maximum FLEN can be set to is 16.
- The maximum number of digits that can be entered in response to the SPN prompt is 11.
- The maximum number of digits that can be entered in the SDRR table is seven.

The SPN must be nine digits in length to effectively use the SDRR facility for a FLEN of 16.

In practice, for International calls, fourteen digit number translation is the maximum required. The following table summarizes the options available when the response to the FLEN prompt is a value in the range 1-16:

FLEN	SPN	SDRR
9	9	0
9	3	6
10	10	0
10	3	7
10	7	3
14	7	7
16	9	7
16	10	6
16	11	0
14	5	7

The Meridian 1 translation capability is illustrated in the following example:
A Meridian 1 customer has offices in Holland and the United Kingdom (UK).

It is commonplace for calls to be placed from the customer’s UK offices to their Dutch offices by dialing the international Public Service Telephone Network (PSTN), even though private circuits and a private numbering plan exist for the routing of such calls.

The customer requires that the dialed digits be analyzed down to the third to last digit, in order to recognize their assigned Direct Dial Inward (DDI) range.

The international PSTN number is: 010 31 250 3731XX

The FLEN, determined by the actual full number length is, 14.

Therefore, the following is entered in overlay 90:

SPN	010 31	(only one needed for Holland)
SDRR	ARRN	
ARRN	250 373 1	

Note: To ensure proper operation in the previous example the value input in response to the FLEN prompt must be at least 14. This is arrived at by adding the number of digits entered in response to the SPN and ARRn prompts with the number of remaining digits required to route the call correctly. In the previous example five digits were entered in response to the SPN prompt, seven digits were entered in response to the ARRn prompt, and two digits were required to terminate the call at the correct number yielding a total of 14 digits. If FLEN were set to 12 in the previous example, then the last two digits would be lost, and the call would not terminate.

End-of-dial timing

For special number codes (SPN) the default value for ITOH is “NO” allowing termination of the call to be attempted. If ITOH is set to “YES” then the call will not terminate if the NIT timer expires before the number of digits dialed reaches the value entered for FLEN.

NPA and NXX

Flexible length NPA and NXX codes have been available on X11 since Release 8. This allows 3 to 10 digit (4 to 11 for 1+ dialing) NPAs and NXXs. Currently, the flexible length NPAs and NXXs do not change the number of digits a user is allowed to dial, but only changes which portions of the number are recognized as different components. If an NPA is dialed, 10 digits (11 for 1+ dialing) are expected before an attempt to terminate is made. If an NXX is dialed, 7 digits (8 for 1+ dialing) are expected before an attempt to terminate is made. The FNP feature does not change the operation of NPA and NXX dialing.

NPA + NXX + XXXX

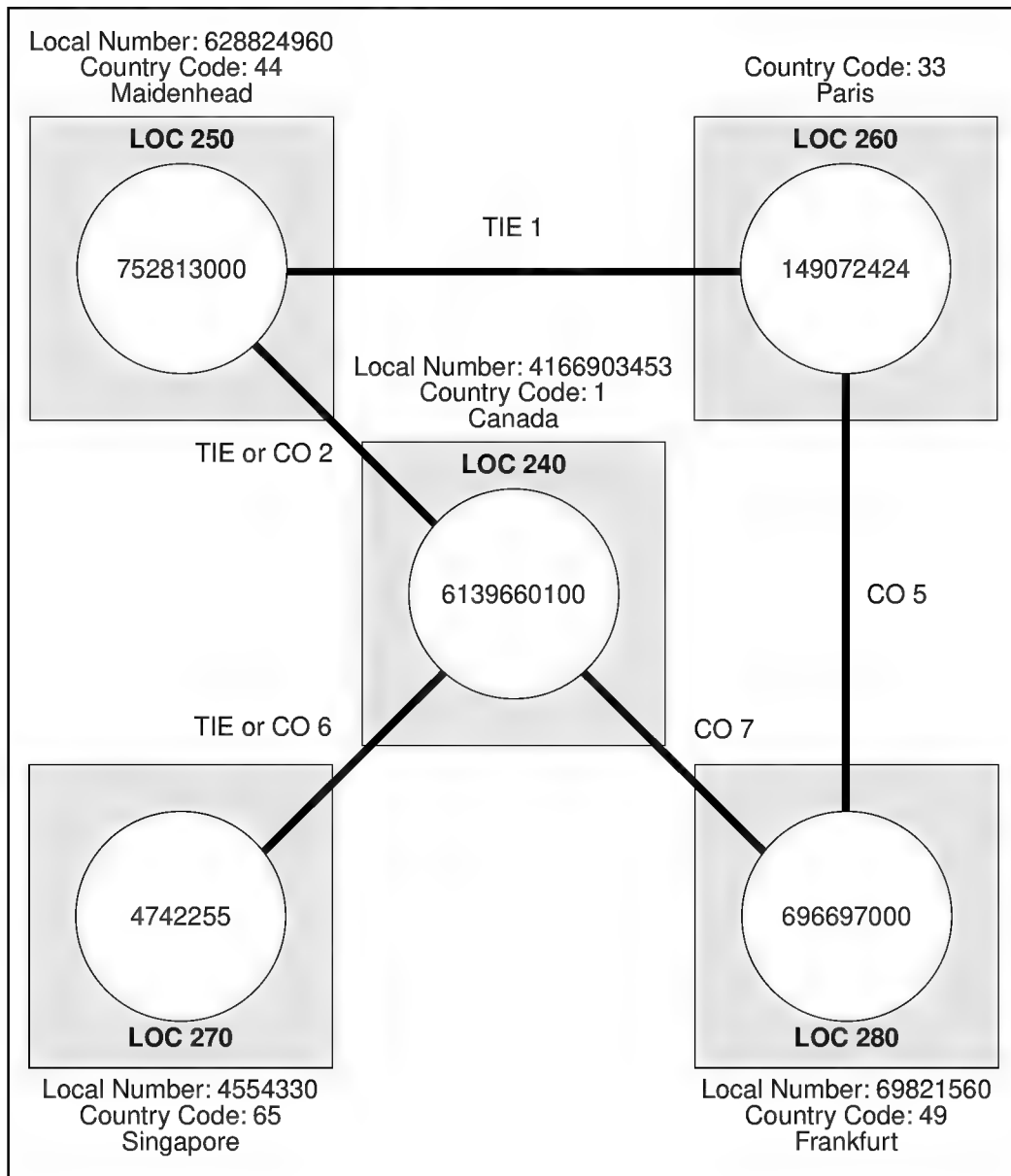
total of 10 digits (11 digits for 1+ dialing)

NXX + XXXX

total of 7 digits (8 digits for 1+ dialing)

[Figure 5](#) illustrates a network where both off-net and on-net dialing are used.

Figure 5
Sample network to illustrate off-net dialing



On-net dialing and associated software settings

Canada to Maidenhead	AC1	LOC	TIE		DELETE	INSERT	FLEN
62501234	6	250	2		3	NONE	7

Canada to Paris	AC1	LOC	TIE		DELETE	INSERT	FLEN
62602234	6	260	2		NONE	AC1	7

Canada to Singapore	AC1	LOC	TIE		DELETE	INSERT	FLEN
62703234	6	270	6		3	NONE	7

Off-net dialing and associated software settings

Canada to Maidenhead	AC2	SPN	TIE	CO	DELETE	INSERT	FLEN
9-44-628824960	9	44	2		2	AC2	11
	9	44		2	NONE	011	11

Canada to Frankfurt	AC2	SPN	TIE	CO	DELETE	INSERT	FLEN
9-49-69821560	9	49		7	NONE	011	10

Canada to Singapore	AC2	SPN	TIE	CO	DELETE	INSERT	FLEN
9-65-4554339	9	65	6		2	AC2	9
	9	65		6	NONE	011	9

Paris to Frankfurt	AC2	SPN	TIE	CO	DELETE	INSERT	FLEN
9-49-69821569	9	49		5	NONE	19	10

End-of-dial timing

There can be cases where the requirements dictate that the DN's at a particular location are of varying lengths. In this case, the value of FLEN is set to the maximum DN length for that particular location before termination is attempted. If the number of digits dialed is less than the maximum DN length defined, the expiration of a timer, or the use of the "fast connect" key is required to attempt termination.

Pre X11 Release 20 ESN operation has a timer to perform NARS interdigit timing. This timer is set at a hard coded value of 8 seconds.

With X11 Release 20 and later a new NARS interdigit timer (NIT) is introduced in the customer data block. The NIT is packaged within the NARS package. Therefore, the FNP package is not required for NIT. During dialing, until a valid Network Access Code, LSC, DSC, or TSC is recognized, interdigit timing is done in the same way as it is for a regular call. Once NARS has been accessed, the NIT timer is used to perform interdigit timing. If the NIT timer expires before FLEN digits have been dialed, or an octothorpe (#) has been entered to indicate that all digits have been dialed, then an attempt is made to terminate the call.

For trunk steering codes (TSC) and special number (SPN) codes if the NIT timer expires before FLEN digits have been dialed, or an octothorpe (#) has been entered to indicate that all digits have been dialed, then operation depends on the response to the Inhibit Time Out Handling (ITOH) prompt. The ITOH option is set for TSC using LD 87 and SPN using LD 90.

If ITOH=NO (default) an attempt is made to terminate the call.
If ITOH=YES then the call will not terminate.

Vacant Number Routing

In order to keep the Transferable Numbering Plan at a manageable level, Vacant Number Routing (VNR) is introduced. Instead, of changing the numbering trees and steering codes at each location, all the routing information can be kept at one central location. When a DN is transferred from one location (A) to another (B), routing information at the two locations involved do not have to be changed. Instead all routing information can be stored at a third location (C) and this would be the only location to have its routing information updated.

If a vacant number is dialed, the call is routed to location C. This location decides where the station is located, if the station cannot be located then vacant number treatment at the terminating location is given. The DN is not treated as invalid at the location where vacant number dialing is in effect.

Administration of the Transferable Numbering Plan can be located at central switches and smaller switches can be alleviated of having to administer the entire numbering plan.

Free Calling Area Screening

The Free Calling Area Screening (FCAS) feature currently allows a six digit NPA-NXX translation which excludes “0” and “1” as the leading digit for NXX. The FCAS operation is not changed with FNP equipped.

Format:

NPA	-	NXX
3 digits		3 digits

Free Special Number Screening

A new screening capability, Free Special Number Screening (FSNS), is introduced with the FNP feature. 1 to 11 digit SPNs can be screened against three digit XXXs to allow or restrict calls going to particular XXXs. XXX can be any string of digits from 000 to 999.

Format:

SPN

-

XXX

1-11 digits

3 digits

The following is an example of how to use a one to five digit SPN associated with a five to one digit XXX for screening purposes.

input in FSNS table		real	
SPN	XXX	SPN	XXX
545	192	5	45192
545	192	54	5 192
545	192	545	192
545	192	5451	92
545	192	54519	2

Capacity Expansion

RLB and DMI Expansion

In order to support Universal Numbering Plan, the maximum number of Route List Blocks and Digit Manipulation tables allowed is increased from the current maximum of 255 to 1000. This is necessary as the need for more routes and digit manipulation is required for Global Networking. Digit manipulation is allowed for LSC as a result of the existing Local Steering Code Manipulation (LSCM) feature.

LOC, LSC, DSC TSC Expansion

In Release 13, the maximum number of LOC allowed were increased from 255 to 10000. In Release 16 maximum number of steering codes allowed were increased from 10000 to 32000.

AC1 and AC2 Expansion

Prior to the introduction of FNP AC1 and AC2 were either one- or two-digit codes. With FNP equipped AC1 and AC2 can be one- to four-digit codes.

Feature interactions

Digital Access Signaling System 2 (DASS2) and Digital Private Network Signaling System 1 (DPNSS1)

It is not possible to use Network Alternative Route Selection on *incoming* DASS2 and DPNSS1 calls. Therefore, an intelligent NARS or BARS switch must be the first DPNSS switch if the call is routed over an DPNSS network.

DN Entries

All translation entries in the same NARS or BARS translator must be leftwise unique as is the requirement for all existing translator.

ESN feature interactions

ESN features operate the same way they did prior to the introduction of FNP if FLEN is set to zero. When used along with ISDN, FNP supports features which are currently supported jointly by ESN and ISDN.

Group Dialing Plan

When Group Dialing Plan (GDP) is used, the maximum number of digits allowed for either LOC+DN, LSC+DN, or DSC+DN cannot exceed ten digits.

Integrated Services Digital Network

Integrated Services Digital Network (ISDN) requires the dialing of all the digits before the number is sent out in the D-channel “SETUP” message. In order to support ISDN with Flexible Numbering Plan, the dialed digits are sent when, the Interdigit Timer (IDT) times out, the maximum number of digits required is dialed, or an octothorpe (#) is dialed.

Vacant Number Routing

With X11 Release 23 FPE, Vacant Number Routing (VNR) is available only when FNP is enabled (FNP = YES). Therefore, VNR is only prompted in Overlay 15 when FNP = YES. When FNP is disabled, VNR is also disabled.

The Flexible Numbering Plan feature allows the user to define what is to be sent as CLID and what is to be displayed on the telephone set on a per-DSC basis. The following shows what is transmitted as CLID when a particular type of number is dialed:

type of number dialed	CLID sent
SPN	Home NPA+Home NXX+DN
NPA	Home NPA+Home NXX+DN
NXX	Home NXX+DN
LOC	Home LOC+DN
DSC, TSC	LSC+DN or LOC+DN or DN

Supplemental Digit Restriction or Recognition

The Supplemental Digit Restriction or Recognition (SDRR) feature blocks unnecessary looping through the Central Office or Public Exchange at the terminating switch when an off-net number is dialed. This feature applies to NPA, NXX, and SPN calls and works as it always has. However, the restrictions are changed to allow a variable number of digits up to eleven digits in the digit restriction table independent of the number of digits entered for the NPA, NXX, or LOC prompts.

The size of the SDRR block for a given SPN number is limited to 64 entries.

With the introduction of the Alternate Routing Remote Number (ARRN) up to sixteen digits can be analyzed for SPNs.

Transferable DNs

Transferable DNs are supported on a one to seven digit CDP. They are not supported when the eight to ten digit CDP is used.

Varying Length DNs

For a location with DNs of different lengths (e.g. five and six digit DNs), the expected number of digits for the route going to that location is set to the number of digits of the longest DN at that location. Termination to the shorter length DNs can only happen when an octothorpe is entered or when the NARS interdigit timer (NIT) times out.